Figure 3. Protocol for volunteer sampling of *Pfiesteria piscimorte* at fish kills.

PROTOCOL: SAMPLING FOR THE NEW TOXIC DINOFLAGELLATE

1. When a fish kill is in progress (finfish and/or shellfish), please observe whether the water is discolored in the vicinity of the kill. Also, note whether the fish are exhibiting erratic behavior, "sudden death" over a short period, or other symptoms which lead you to suspect that the toxic dinoflagellate may be involved.

2. If you suspect a toxic alga, please contact Dr. JoAnn Burkholder or Dr. Edward Noga at NCSU (telephone (919) 515-2726 or (919) 829-4236). Messages can be left on the answering machines, which will be checked at least twice per day.

3. We would very much appreciate your help in obtaining grab samples from water in the kill area (an "elbow's length" below the water surface), including:

   (a) $\geq$ 250 mL of water (about 2 pints) without preservatives, kept in the shade at field / room temperatures;

   (b) $\geq$ 50 mL of water (about 1 cup) preserved with acidic Lugol's solution (which we will be glad to supply if needed). Just add enough (dropwise) to make a golden-orange color (0.01% solution -- can be judged roughly by eye, from water color).

   Any clean, well-rinsed plastic or glass container can be used. It would be best if the samples are collected in the same manner by all who would like to help. If you are only able to sample in one location, please collect water where the most fish are still dying; or, if the fish are already dead, then sample where there are high numbers of dead fish that are drifting toward shore. If you don't happen to have preservative with you, please collect fresh samples -- they will still be very helpful.

   Alternatively, if possible, these 2 types of samples (1 fresh, 1 preserved) should be taken along a (rough)"transect" proceding from a point well outside the kill area, inward to the center or worst area with dying/dead fish. Since the length of this transect would depend on the size of the affected area (and the direction of the current), for consistency's sake, at kills that appear to affect many fish over a relatively large area, 2 samples (1 fresh, 1 preserved) should be taken at each of these locations (12 samples in total):

   (a) Outside the kill area;
   (b) On the margin of the kill area;
   (c) About 1/4 of the distance (roughly) inward toward the center of the kill area;
